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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,293

11/18/2005

Rolf Muller

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09/08/2009

K&L Gates LLP

P.O. Box 1135

CHICAGO, IL 60690

EXAMINER

MESH, GENNADIY

ART UNIT

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1796

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,293	<b>Applicant(s)</b> MULLER ET AL.	
	<b>Examiner</b> GENNADIY MESH	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 August 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-29,31-33,35-41 and 44-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-29,31-33,35-41 and 44-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 3, 2009 has been entered.

Claims 1-12, 30, 34 and 42-43 are canceled by Applicant. Claims 13 - 29, 31-33, 35-41 and 44- 52 are active. Claims 13 and 49 have been amended. Support for Amendment of Claim 13 have been found in Specification and original Claim 49 as indicated by Applicant.

### ***Response to Amendment***

2. The Declaration presented by Rolf Muller under 37 CFR 1.132 filed on August 3, 2009 is insufficient to overcome the rejection of Claims 13 - 29, 31-33,35-41 and 44- 52 as set forth in the last Office action ( see action mailed on December 4, 2008) for following reasons:

a) Applicant stated, that cited reference to Jialanella ( US 6,300,398) discloses different composition due to presence of nucleating agent. This argument is not persuasive, because Applicant use open language as "comprising" in Claim 13.

Thus, nucleating agent (or any other components) is not excluded from scope of Claim 13.

b) Applicant pointed out that Jialanella use different type of mixer than Applicant.

Note, that language of Claim 13 recites " wherein the polymer mixture in the form of a thermoplastic melt is prepared by a means selected from the group consisting of a **dispersively and distributively acting mixing system**, a double-screw extruder, a single-screw extruder with mixing section, a Buss-Ko kneader and combinations thereof ".

Jialanella discloses that " The compositions of the present invention are compounded by any convenient method, including dry blending the individual components and subsequently melt mixing, either directly in the extruder used to make the finished article, or by pre-melt mixing in a separate extruder or mixer such as, for example, a Haake unit or a Banbury mixer" - see column 20, lines 37 - 43.

Thus, Jialanella discloses mixers which are capable produce **dispersively and distributively actions**. Therefore, this applicant argument is not persuasive.

c) It is noted, that amended Claim 13 is in format of product-by-process claim. In accordance with the applicable to the treatment of product-by-process claims (MPEP 2113), the process limitations in Claim 13 have no probative value **absent evidence to the contrary**.

Applicant stated, that results presented in Specification ( see Fig. 1-7) are unexpected and show superior properties, specifically elongation at break for composition obtained by mixing in twin screw extruder compare with properties of same composition mixed by other types of mixers.

However, this argument also is not convincing, because data provided by Applicant show increase of elongation only for specific range of P(j) component in

Art Unit: 1796

composition of about 10% and only if composition was mixed during specific period of time ( see Fig. 3 for example). It also should be pointed out that variety of twin screw extruders with different type of screw arrangement ( intermeshing or non-intermeshing with many different types of mixing elements ) are available. Note, that Applicant did not present any data to support statement that **any of twin screw extruders** can be used as it implies by language of Claim 13.

At least for reasons above The Declaration is not commensurate with scope of Claims 13 - 29, 31-33, 35-41 and 44- 52 and was found insufficient to overcome the rejection of above cited claims.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 13 – 29, 31-33, 35-37, 44-45 and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jialanella ( US 6,300,398) in view of Polywax Polyethylene ( Baker – Hughes web site publication, Baker - Hughes hereafter).

Regarding Applicant's Claims 13, 31-33, 35-37 and 49- 52 Jialanella discloses composition of a linear or substantially linear low density polyethylene and a wax, including low molecular weight polyethylene wax( see abstract, lines 10 –35 ,column 3

Art Unit: 1796

and line 20 –60, column 13), having polydispersity about 2 ( see column 13, lines 50 – 54).

Jialanella further discloses that linear or substantially linear low density polyethylene has degree of branching in a range from 0.01 – 3 per 1000, ( see line 40, column 3) which encompasses degree of branching claimed by Applicant for first polymer component P(i), but silent about branching degree of low molecular weight polyethylene wax, implying that any low molecular weight polyethylene wax, including wax with same degree of branching is known in the art (and commercially available), is suitable for the invention disclosed by Jialanella with reasonable expectation of adequate results.

However, low molecular polyethylene wax with no branching, 100% linear, that will satisfy limitations related to degree of branching claimed by Applicant disclosed by Baker –Hughes publication as being available for thirty years ( and incorporated herein as a reference).

Thus, use of 100% liner low molecular weight polyethylene wax in invention claimed by Jialanella would have been obvious with reasonable expectation of success absent showing of unexpected results that can be clearly attribute to claimed degree of branching.

Regarding new limitation of Claim 13 ( inserted from previously rejected claim 49) Jialanella discloses that composition can be prepared by extruders, Haake mixer or Brabender mixer ( see column 23, lines 55-57 and column 20, lines 35 -43 ). Also note, that claim 13 is in format of product-by-process claim. In accordance with the

Art Unit: 1796

applicable to the treatment of product-by-process claims (MPEP 2113), the process limitations in claim 49 have no probative value absent evidence to the contrary.

In addition note, that case law holds that “even though product-by –process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding Applicant’s Claims 14 – 29 and 51 note, that composition disclosed by Jialanella in view of Baker - Hughes is being substantially same as Applicant’s, will have substantially same physical properties including Modulus, Elongation at break, Stress Yield and Melt flow. Burden shifts to the Applicant to prove the contrary.

Regarding Claims 44 and 45 see Jialanella lines 54- 60, column 13 and 18 – 30, column 13.

Regarding limitation of Claim 50 as “swelling agent” – Jialanella discloses that composition can comprise plasticizer( see lines 24-29,column 2).

4. Claims 38 – 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jialanella ( US 6,300,398) in view of Baker - Hughes as applied to claims 13 – 29,

Art Unit: 1796

31-33,35 -37, 44-45 and 49-52 above, and in further view of Kokko ( Metallocene-Catalyzed Ethene Polymerization: Long-Chain Branched Polyethylene, September 2002).

Jialanella in view of Baker-Hughes discloses composition, comprising linear low density polyethylene, wherein this polyethylene polymer has long chain branching, but silent about length of the branching chains ( see line 40,column 3).

However, Kokko teach that short chain branches, less than 40 carbon atoms will interfere with formation of crystal structure of polyethylene ( see page 1,second paragraph) and when branch length increases they (chains) become able to form lamellar crystals.

Therefore, it would have been obvious to one ordinary of skill in the art at the time of the invention to use composition of Jialanella wherein polymer has long chain branching with length higher than 40 carbon atoms per teaching of Kokko, in order to increase overall crystallinity and probability for heterocrystallization with other polymers in composition.

5. Claims 46 – 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jialanella ( US 6,300,398) ) in view of Baker - Hughes as applied to claims 13 – 29, 31-33, 35 -37, 44-45 and 49-52 above and in further in view of Eastman publication ( EP) “ Epolene E-20 Wax – Extrusion lubricant for Fractional Melt High-Density Polyethylene (HDPE)”, pages 1-4, September 1999.

As it was discussed above Jialanella discloses composition, wherein low molecular component ( wax) has density at least about 0.925 g/cc or higher as most



Art Unit: 1796

preferable, but not explicitly discloses waxes with density above 0.950 g/cc ( see lines 54-60,column 13) and pointing out that wax should have high melting point, preferably higher than 10<sup>0</sup> C and even more preferably 30<sup>0</sup> C than a polymer( see lines 18 – 25, column 13).

Note, EP publication discloses composition of HDPE with low molecular weight polyethylene wax, wherein wax ( see EP : “Epolene E-20”, incorporated herein as a reference) has degree of polymerization low than 200, based on M<sub>n</sub> value of 1600 and density 0.96 g/cc , which is indicate high degree of crystallinity and softening point above 110 <sup>0</sup>C.

Therefore, it would have been obvious to one ordinary of skill in the art at the time of the invention to substitute wax in composition discloses by Jialanella for Epolene E-20 or to wax with even higher melting point in order to increase working temperature range of the composition.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

Art Unit: 1796

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 13 - 29, 31 -33, 35-41 and 44-52 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 13-28 of copending Application No. 11/577,250. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

1) claimed subject matter in both applications based on substantially same composition and

2) Claim 49 of Application No. 10/553,293 claimed use of this composition for variety of molded articles, which is the claimed subject matter of copending Application No.11/577,250.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented

### ***Response to Arguments***

7. Applicant's arguments filed on October 20, 2008 have been fully considered but they are not persuasive.

8. Applicant's arguments related to Claims 13 – 29, 31-33, 35-37, 44-45 and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jialanella ( US 6,300,398) in view of Polywax Polyethylene ( Baker – Hughes web site publication) based on alleged deficiency of Jialanella as it explained in Declaration presented by

Art Unit: 1796

Rolf Muller. It is noted, that Applicant's arguments are same as presented in Declaration.

However, because Declaration was found insufficient to overcome current rejection than Applicant's arguments also found unpersuasive.

9. Obvious Double Patenting rejection is maintained for the Record.

In addition note, that Applicant did not provide any arguments related to Obvious Double Patenting .

### ***Conclusion***

#### **THIS ACTION IS NOT MADE FINAL.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GENNADIY MESH whose telephone number is (571)272-2901. The examiner can normally be reached on 10 a.m - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272 1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gennadiy Mesh  
Examiner  
Art Unit 1796

/GM/

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796